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A Good Crisis:  
Canadian Municipal  
Credit Conditions  
After the Lehman Brothers  
Bankruptcy

Kyle Hanniman

Institute on Municipal Finance and Governance



UNIVERSITY OF  
TORONTO

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By  
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Kyle Hanniman is an Assistant Professor in the Department of Political Studies, Queen's University and a former IMFG Post-Doctoral Fellow.

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The paper's shortcomings are my responsibility.

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# A Good Crisis: Canadian Municipal Credit Conditions After the Lehman Brothers Bankruptcy

Kyle Hanniman

## **Abstract**

Subnational governments in several countries struggled to borrow on credit markets during and after the global financial crisis of 2008 and 2009. Canadian municipalities were not immune. They, like many governments, were unable to borrow for a brief period after the Lehman Brothers bankruptcy of 2008. But municipal credit conditions improved markedly after the peak of the crisis. Interest rates plunged, demand for long-term bonds increased, and the investor base expanded. Municipal borrowers did not, however, fare as well as the federal and provincial governments, which saw even sharper declines in interest rates. This paper seeks to explain these developments. It links municipal success to factors underpinning low interest rates and stellar municipal creditworthiness, and attributes the superior conditions of federal and provincial borrowers to volatility in global financial markets and patterns of foreign investment in Canada's government bond markets. The analysis reveals the resilience of Canada's municipal borrowers in the face of global credit shocks and the virtues of Canada's tightly regulated system of municipal borrowing.

Keywords: municipal borrowing, municipal credit, bond markets

JEL Codes: G24, H74, H81

# A Good Crisis: Canadian Municipal Credit Conditions After the Lehman Brothers Bankruptcy

## I Introduction

Borrowing is an efficient and equitable way for municipalities to finance infrastructure investment. However, debt needs to be serviced and, at a certain point, interest and principal payments can impede a government's ability to deliver services and invest in infrastructure. Debt also exposes borrowers to financial market risks. By now, these risks are well known. They were painfully evident during the Eurozone debt crisis in 2012, when exorbitant risk premiums on government bonds pushed several national governments to the brink of default.<sup>1</sup>

Less appreciated is that these risks are far greater at subnational levels of government.<sup>2</sup> Mass selloffs of U.S. municipal bonds in 2010 and 2011, the inability of Spanish regions to borrow on conventional bond markets during much of the Eurozone debt crisis, and the destruction of France's municipal loan market provide recent and powerful examples of the insecurities local borrowers face.<sup>3</sup>

Canadian municipalities are not immune. They, like Canadian provinces and other subnational governments, were unable to borrow for a period after the Lehman Brothers bankruptcy in 2008. But their credit conditions improved markedly after the peak of the crisis.<sup>4</sup> Interest rates plummeted, demand for long-term bonds increased and the municipal investor base expanded. Municipalities did not, however, fare as well as the federal and provincial governments, which enjoyed even sharper declines in interest rates.

This paper seeks to explain these developments. It links the success of municipal borrowers to factors underpinning low benchmark interest rates and strong municipal creditworthiness, and attributes the superior conditions of

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1. This paragraph draws on Hanniman (2015a). The Eurozone debt crisis began in 2009 and ended, for most countries, in 2012. The crisis continues for Greece.

2. A subnational government refers to any government of a coherent territorial entity below the national level (including state, provincial and local governments in federal systems and local governments in unitary systems), where "below" is defined in geographic – rather than constitutional – terms.

3. The fortunes of these borrowers have improved. Spanish regions are able to borrow again, municipal spreads (or the interest rate premium municipal borrowers pay over the federal government) in the United States have fallen and stabilized, and French subnationals have substituted bonds for commercial loans. Still, these incidents remind us of the vulnerabilities of subnational borrowers. National access to credit was never seriously impaired in the United States or France during the crisis, and although the Spanish government was forced to borrow at a significant premium, it was never locked out of credit markets.

4. The peak refers to the period following the bankruptcy of Lehman Brothers, an American financial services firm.

provincial and federal governments to volatility in financial markets and patterns of foreign investment in Canada's government bond market.

The study broadens our understanding of municipal borrowing in Canada. To date, studies of municipal borrowing have focused on normative arguments for or against debt financing (Kitchen 2006); descriptions of borrowing rules (Amborski and Nichols 2010); the origins of those rules (Tassonyi 1997); and the implications of fiscal rules for fiscal discipline and health (Bird and Tassonyi 2003). Notably lacking are studies of the drivers of interest rates, bond spreads, and other indicators of credit conditions. This paper addresses this gap.

It also informs debates about how to address Canada's municipal infrastructure deficit.<sup>5</sup> Municipalities' capital needs are considerable. They cannot be paid for by transfers, taxes, and user fees alone. Borrowing must, for practical reasons, be part of the solution. Fortunately, it also makes good sense. Borrowing ensures the costs of long-term assets are spread across their multi-generational user base. Although borrowing carries risks, Canada's system of municipal finance limits these risks considerably. Many Canadian cities would be wise, therefore, to take advantage of today's ultra-low interest rates.

Finally, this study contributes to research on subnational borrowing and hard budget constraints (Bird and Tassonyi 2003; Rodden, Eskeland and Litvack 2003). This work addresses, among other questions, whether local fiscal discipline ought to be enforced by credit markets or hierarchical fiscal rules from higher levels of government. The literature generally favours market discipline, though there is growing support for regulating local borrowing where preconditions for effective market surveillance are absent (Rodden 2006; Ter-Minassian and Craig 1997). Canada's system of municipal borrowing is hierarchical: municipal borrowing is subject to provincial limits and market discipline is limited by the belief, widely held among investors, that provinces implicitly guarantee municipal debt. This system has done a good job of limiting municipal debt while ensuring stable and affordable access to credit. These benefits cannot, in light of the recent struggles of subnational borrowers, be taken for granted.

The remainder of the paper proceeds as follows. Section two develops a framework for assessing the state of municipal credit. Section three analyzes this state in general terms. Section four compares the credit conditions of federal, provincial, and municipal governments. Section five summarizes the findings and their theoretical and policy implications.

## **2 Assessing Municipal Credit**

Assessing the state of municipal credit is not, for most observers, simply a question of whether credit is affordable. It is also a question of whether markets encourage governments to make sound fiscal decisions (Hanniman 2015b). If the risk premium on government bonds is too low (perhaps because local debts

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5. See, among others, Bazel and Mintz (2014), Kitchen (2006) and Slack (2011).

are guaranteed by a higher level of government), governments have incentives to borrow more than they can independently repay (Lane 1993). If the risk premium is too high (perhaps because of market panic), it places undue stress on government finances (De Grauwe 2012) and discourages governments from making infrastructure investments (Hanniman 2015b).

Several studies examine whether or under what conditions lenders correctly calculate risk premiums (McKinnon 1997; Rodden 2006; Weingast 2009). Concerns about low premiums and excessive borrowing dominate this research.<sup>6</sup> But these concerns are moot for Canadian municipalities. Risk premiums on municipal debt may – on account of the provinces' implicit bailout guarantees – be underpriced. But provincial rules forbid municipalities from exploiting the situation by recklessly issuing bonds (Bird and Slack 1993; Bird and Tassonyi 2003).

Excessive risk premiums are, however, a threat. Several subnational governments, even those with implicit bailout guarantees, struggled to borrow during and after the financial crisis of 2008 to 2009 (Hanniman 2015b). If local borrowing is tightly regulated, as it is in Canada, these struggles will not result in debt crises. However, they do make it harder for governments to borrow for infrastructure.

Thus, the critical question for assessing municipal credit in Canada is not whether lenders impose sufficient discipline, because discipline is guaranteed by provincial rules. Rather it is whether municipal credit is stable, accessible, and affordable. Indeed, we can say, with some risk of simplification, that the more accessible municipal credit is, the better off municipal finances will be. This is particularly true at present, when the need for infrastructure investment is so great.

Therefore, rather than assessing whether risk premiums promote appropriate levels of borrowing, I focus on simple measures of cost and accessibility. These measures are (1) absolute borrowing costs; (2) demand for long-term debt; (3) the quality and size of the investor base; and (4) the relative borrowing costs of the municipal, provincial, and federal sectors. The first three indicators, addressed in section three, describe the general state of municipal credit. The final indicator, addressed in section four, describes municipal credit conditions relative to senior levels of government.

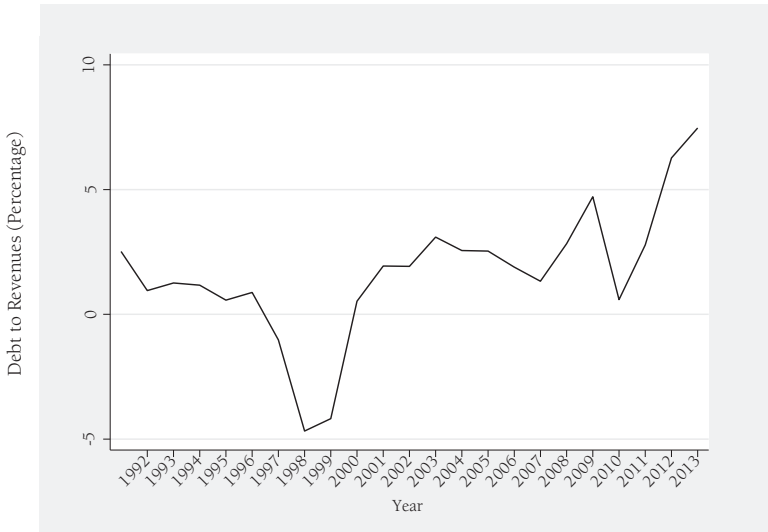
### **3 The State of Municipal Credit**

Municipal borrowing in Canada is on the rise. Figure 1 displays net aggregate local borrowing as a percentage of aggregate local revenues over time. As the figure shows, this percentage increased significantly from 2.8 percent in 2008 to 4.7 percent in 2009; fell sharply to 0.6 percent in 2010; recovered to 2.8 percent in 2011; and exceeded 6 percent in 2012 and 7 percent in 2013. This increase likely reflects municipalities' growing infrastructure needs and federal incentives

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6. See Hanniman (2015a) and Joffe (2012) on pricing in Canada's provincial bond market.

Figure 1: Net Municipal Borrowing (Lending) as a Percentage of Local Revenues



Sources: Statistics Canada (Cansim Table 385-0032); author's calculations. Positive values indicate net borrowing; negative values indicate net lending.

to address those needs.<sup>7</sup> However, it also reflects municipalities' favourable credit conditions. This section describes these conditions in detail.

### 3.1 Borrowing Costs

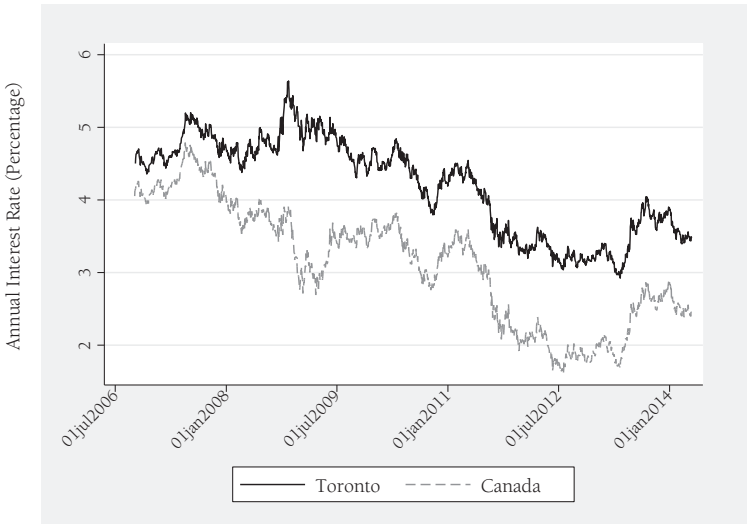
The most direct way of assessing municipal credit is to examine borrowing costs or interest rates on municipal bonds. Figure 2 displays annual rates on 10-year general obligation bonds for Toronto and Canada. The data are estimates of what a municipality would pay on a bond if it were to borrow on a given day. They come from BMO Capital Markets, a major market maker and underwriter of municipal debt. The plot is limited to Toronto, but borrowing costs do not differ a great deal across Canadian municipalities. Thus, the plot provides a good indication of municipal conditions in general.<sup>8</sup>

Toronto's 10-year borrowing costs spiked after the Lehman Brothers bankruptcy, rising from 4.64 percent on September 15, 2008 (the day before

7. In January 2009, the federal government established the \$4-billion Infrastructure Stimulus Fund to provide up to 50 percent federal funding for a range of capital projects. Project funds were matched by provinces, territories, municipalities, and not-for-profit organizations.

8. Reliable bond yield data for most municipalities are unavailable, but municipal bond underwriters interviewed for this research confirmed that differences in municipal borrowing costs are small.

Figure 2: Interest Rates on 10-year City of Toronto and Government of Canada Bonds



Sources: BMO Capital Markets; Bloomberg; author's calculations

Lehman failed), to 5.57 percent on November 3, 2008. Toronto's rates fell in late 2008 and continued to fall, with some bumps along the way, until May 2013, when they bottomed out at 2.93 percent. Rates began to rise again that spring and fluctuated between roughly 3.2 percent and 4 percent from June 2013 to April 2014 or the end of the time series.<sup>9</sup>

Table 1 provides descriptive statistics for municipal borrowers monitored by BMO. It also includes, for comparative purposes, Canadian and Ontario interest rates. From the day after the Lehman bankruptcy (September 16, 2008) to the end of the time series (April 21, 2014), average 10-year rates were 3.96 percent for Toronto, 3.8 percent for the Municipal Financing Authority of British Columbia (MFABC), 3.92 percent for York and Peel Regions, and 3.95 percent for Winnipeg. A longer time series would show that 2014 rates were low by historical standards.<sup>10</sup>

### 3.2 Demand for Long-Term Bonds

The principal justification for government borrowing is to permit jurisdictions to finance lumpy capital investments. Borrowing ensures that wastewater systems, roads, bridges, and other long-term assets, the benefits of which span multiple generations, are not paid entirely by today's taxpayers, but by the debt charges

9. This rise coincided with the U.S. Federal Reserve's announcement of plans to taper its quantitative easing program. This resulted in a global rise in interest rates.

10. The BMO series does not begin until mid-2006.

*Table 1: Interest Rates on 10-Year Bonds, Selected Canadian Governments, After the Lehman Brothers Bankruptcy*

Borrower	Mean	Standard Deviation	Median	Min	Max	S&P Rating	Moody's Rating
Toronto	3.96	.65	3.91	2.93	5.57	AA	Aa1
MFABC	3.80	.66	3.74	2.80	5.49	AAA	Aaa
York / Peel	3.92	.65	3.87	2.90	5.54	AAA	Aaa
Winnipeg	3.95	.68	3.88	2.93	5.68	AA	Aa1
Ontario	3.59	.61	3.61	2.60	5.00	AA-	Aa2
Canada	2.70	.63	2.76	1.58	3.82	AAA	Aaa

Sources: BMO Capital Markets; author's calculations based on yields from September 16, 2008, to April 21, 2014. Ratings are as of August 2014.

of future users as well. But governments cannot distribute repayments across generations unless investors are willing to buy 10-, 20-, and even 30- and 40-year bonds.<sup>11</sup>

This demand is not a given. It disappeared for several months during the height of the global financial crisis. It has re-emerged, however, allowing several issuers – including Toronto, Vancouver, Winnipeg, and TransLink (Greater Vancouver's transit authority) – to sell 30- and 40-year bonds (see Table 2). Demand for long-dated bonds appears stable. It is supported by municipalities' strong creditworthiness and low yields on short-term bonds.<sup>12</sup>

### 3.3 Foreign Investment

One of the most interesting trends in municipal credit is the growth and diversification of the municipal investor base. American insurance companies, pension funds, and asset managers are increasing their holdings of Canadian municipal debt, attracted by the sector's mix of (relatively) high yields and strong credit ratings. Today there are about 20 potential and 11 regular American buyers of Canadian municipal debt, a significant increase from just a few years ago (Hanniman 2013a). Growth in American demand has been concentrated in liquid bullet bond issues (see box), a market segment dominated by Toronto and a handful of other large municipal borrowers (see Table 2). The book value of foreign holdings of municipal debt rose from \$4.3 billion in March 2008 to \$6.6 billion in March 2014 (see Figure 3).

11. Borrowers could, in theory, refinance bonds of shorter maturities over long periods, but this approach would introduce refinancing risk.

12. These low yields compel investors to buy longer dated bonds, which pay higher interest rates.

### **Municipal Debt Instruments in Canada**

American municipalities issue two types of bonds: general obligation bonds backed by the general revenues of the issuer and revenue bonds backed by revenue streams from specific infrastructure projects.

Revenue bonds are virtually non-existent in Canada. Toronto is the only municipality allowed to use them (Kitchen and Lindsey 2013). Canada's municipal bond market is dominated by two types of general obligation debt: serial and bullet bonds. A serial bond is one in which the principal and interest are amortized or paid in installments. A bullet bond is one in which the entire principal is repaid on the bond's maturity date.

Serial bonds limit refinancing risk by smoothing principal and interest payments over time. However, the principal on municipal bullet bonds in Canada is typically offset by sinking fund revenues, limiting refinancing risk considerably. Bullet bonds also command a broader investor base than serials.

Traditionally, Canada's municipal market has been dominated by serials. But the growing infrastructure needs of large municipalities have increased issuance of bullet bonds significantly in recent years. In fact, aggregate bullet and serial issuance was roughly equal in 2012, at \$2.9 billion and \$3.1 billion, respectively, according to National Bank Financial. Table 2 lists the major bullet issues by Canadian municipalities in 2012.

Theoretically, the benefits of foreign investment are uncertain. Foreign investment lowers borrowing costs in the short run and may, by diversifying borrowers' investor base, do so in the long run as well. But it also creates risks. One is foreign currency exposure. Governments often have to borrow in foreign currency to attract international investors. The problem with this strategy is that governments borrow in one currency and raise revenues in another, causing borrowing costs to increase if the borrower's domestic currency depreciates.<sup>13</sup> Fortunately, this is not an issue for Canada's municipal sector. Issuers have not generally borrowed in foreign currency since the 1990s and most foreign currency bonds have been redeemed. This situation is unlikely to change. Many municipalities are prohibited from borrowing in foreign currencies and most

13. Eichengreen and Haussman (1999) refer to this phenomenon as "original sin." It is most common in developing countries, where government borrowers lack domestic investors or foreign demand for their domestic currency bonds.

*Table 2: Major Bullet Bond Issues by Borrower, 2012*

Issuer	Size (\$-millions)	Term (years)	Issue Date
MFABC	220	5	Nov 19
	165	10	Sep 27
	125	10	Apr 3
Montreal	210	10	Apr 11
	165	20	Apr 11
Ottawa	175	30	Aug 21
Peel	300	30	Oct 19
Toronto	300	30	Dec 3
	300	10	May 8
TransLink	150	40	July 18
	100	40	Feb 2
Vancouver	120	40	Oct 4
Winnipeg	75	40	Sep 27
	50	40	June 25
York	250	20	Oct 11
	150	20	May 15

Sources: National Bank Financial; Hanniman (2013a).

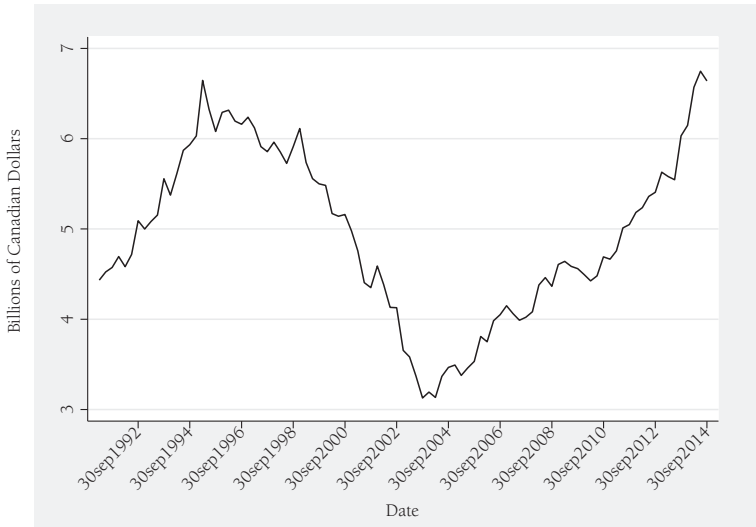
municipalities that are allowed are required by provincial law to swap their exposures.<sup>14</sup>

Foreign investment also increases the risk of capital flight (large-scale sell-offs of municipal bonds) and contagion (the spread of higher borrowing costs from one borrower to another).<sup>15</sup> The reason is a matter of information: foreign investors do not know as much about government finances as domestic lenders do.

14. A foreign currency swap exchanges the principal and interest paid on a bond or loan in one currency with the principal and interest paid on a bond or loan of equivalent value in another currency. Several provinces issue foreign currency debt, but their exposures are, with rare exceptions, largely hedged.

15. This definition is tailored to municipal bond markets. More generally, “contagion refers to the spread of market disturbances – from one country [or jurisdiction] to the other, a process observed by co-movements in exchange rates, stock prices, sovereign bonds and capital flows” (Dornbusch, Park, and Claessens 2000: 179).

Figure 3: Book Value of Non-Resident Holdings of Canadian Municipal Bonds



Sources: Statistics Canada (Cansim Table 376-0146).

They are more likely, therefore, to sell municipal bonds at the first signs of fiscal distress (hence the risk of capital flight). They are also more likely to assume that fiscal distress in one municipality indicates weakness in another (hence the risk of contagion).

But these risks are low in the Canadian municipal context. American investors have entered the market in small numbers. They have also done so cautiously, usually after conducting considerable credit research.<sup>16</sup> These borrowers are not, therefore, apt to panic. They also have the knowledge to distinguish solvent from insolvent borrowers. These factors mitigate the risks of capital flight and contagion.

In short, Canadian municipalities have had little difficulty borrowing in recent years. What explains their success?

### 3.4 *Municipal Credit Conditions*

I attribute municipal success to two phenomena: factors underpinning low yields on benchmark bonds and strong municipal creditworthiness.

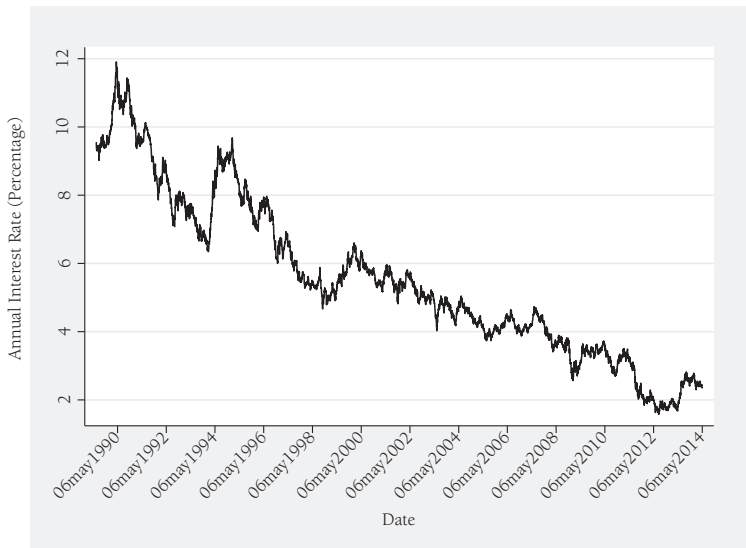
#### **Benchmark Interest Rates<sup>17</sup>**

The primary driver of municipal interest rates is the yield on Government of Canada bonds. This yield is the indirect benchmark for pricing municipal debt.

16. This research is supported by municipalities themselves. Large municipal borrowers, including Toronto, York, and Peel, have launched or enhanced investor relations programs in recent years.

17. This section draws heavily on Hanniman (2015a).

Figure 4: Interest Rates on 10-Year Government of Canada Bonds



Source: Bloomberg

Canada is the benchmark for Ontario, and Ontario’s yield is the benchmark for the other provinces and the municipal sector.

As Figure 2 shows, municipal borrowing costs closely track Government of Canada rates. Canada’s borrowing costs fell steadily in the years leading up to the global financial crisis, rose briefly during the crisis peak, and fell sharply thereafter (see Figure 4). This decline, evident in other G7 countries as well, was driven by factors such as low inflation expectations, excess global savings, weak economic growth, and the low-interest rate policies of central banks.

Interest rates in several countries fell again during the Eurozone debt crisis. Greece’s default and the near defaults of several other countries widened sovereign bond spreads – or the difference among government borrowing costs – considerably, as investors fled peripheral Eurozone debt in favour of the globe’s dwindling supply of low-risk bonds (IMF 2012). Canada was a major beneficiary of this trend. At one point, it was the only G7 country with stable AAA ratings with each of the major international credit rating agencies (Fitch, Moody’s Investors Service, and Standard and Poor’s). Its 10-year borrowing costs hovered around 2 percent for much of 2012. At the time of writing, they were less than 2 percent.

But Canada’s safe-haven status is in decline, not because of events in Canada (though concerns about household debt and commodity prices exist), but because of falling risk elsewhere. In late 2012, the European Central Bank announced a

conditional guarantee on sovereign debt. This triggered a sharp and steady decline in the borrowing costs of Spain, Italy, and other peripheral Eurozone countries. Canadian and peripheral yields have nearly converged as a result.

Theoretically, this convergence should have resulted in part from a rise in Canadian yields.<sup>18</sup> The value of Canadian bonds and other safe assets should have fallen with global risk.<sup>19</sup> But this has not occurred. Rates remain stubbornly low in Canada and elsewhere, suggesting that other, deeper forces are at play.<sup>20</sup>

### **Municipal Creditworthiness**

Benchmark bond yields alone cannot explain municipal success. Municipal borrowers also pay a spread or risk premium over Government of Canada yields. These spreads increased considerably in the wake of the crisis, suggesting that municipal creditworthiness had deteriorated. But this interpretation is questionable.

Table 3 contains a complete list of Canada's municipal credit ratings. Only two municipalities were downgraded between January 2008 and February 2014<sup>21</sup> and only by a single notch in each case. Meanwhile, 15 (or 36 percent) of rated entities were upgraded at least once.<sup>22</sup>

This is in sharp contrast to rating developments in the United States, where a number of municipalities have been downgraded and some, including Detroit and Harrisburg, have defaulted.<sup>23</sup> The last Canadian municipality to default was the now defunct Jacques Cartier, Quebec, in the 1950s (Joffe 2012).

18. It looked as though that moment had come in late 2012 and early 2013, when the Federal Reserve announced plans to taper its quantitative easing program. Rates in Canada and elsewhere spiked in anticipation of decreased global liquidity. But yields fell shortly thereafter as global growth prospects dimmed, conflict between Ukraine and Russia intensified, and fears of Eurozone disinflation resurfaced. Yields dropped even further in 2014.

19. The yield and price of government bonds move in opposite directions.

20. With short-term nominal interest rates approaching zero, developed countries may have entered a "liquidity trap" (Krugman 2008). Growth is stagnant and the conventional means of stimulating it – increasing the money supply to lower interest rates – is losing traction. Central banks are unlikely to raise rates significantly in this context. The implication, in the absence of major policy innovation, is a period of indefinitely low rates. The Bank of Canada has indicated that Canada may be on this low-rate path, even if it does not identify the liquidity trap as the reason (Mendes 2014).

21. They were North Bay (Moody's) and Vancouver (Standard and Poor's). The Vancouver downgrade was not because of the financial crisis, but because of the costs of the 2010 Winter Olympics.

22. These issuers were Belleville, Brandon, Brantford, Chatham-Kent, Essex County, Guelph, Haldimand County, Halifax Regional Authority, Kingston, the Municipal Finance Authority of British Columbia, Oxford County, Peterborough, Sault Ste. Marie, TransLink, Thunder Bay, and Wellington County.

23. To be fair, Detroit is an outlier. No other major American city faces remotely similar challenges and only 35 of the roughly 8,000 local government general obligation bonds rated by Moody's in the United States are below investment grade (Moody's 2014).

*Table 3: Canadian Municipal Credit Ratings, as of February 5, 2014*

Issuer	S&P	Moody's	DBRS
Barrie, City of	AA		
Belleville, City of	AA-		
Brampton, City of	AAA		
Brandon, City of	AA-		
Brantford, City of	AA+		
Calgary, City of	AA+		AA(high)
Chatham-Kent, Municipality of	A+		
Durham, Regional Municipality of	AAA	Aaa	
Edmonton, City of	AA+		AA(high)*
Essex, County of	AA		
Guelph, City of	AA+		
Halton, Regional Municipality of	AAA	Aaa	
Haldimand, County of	A+		
Halifax Regional Municipality	AA-*		
Hamilton, City of	AA		
Kingston, City of	AA		
Lambton, County of	A+		
Laval, City of	AA-		
London, City		Aaa	
Mississauga, City of	AAA		
Montreal, City of	A+	Aa2	A(high)
MFA-BC	AAA	Aaa	
Muskoka, District Municipality of		Aa2	
Niagara, Regional Municipality of	AA		
Norfolk County	A		
North Bay, City of		Aa2	
Ottawa, City of	AA+	Aaa	
Oxford, County of	AA		
Peel, Regional Municipality	AAA	Aaa	
Peterborough, City of	AA-		
Quebec, City of		Aa2	
Regina, City of	AA+		
Saskatoon, City of	AAA		
Sault St. Marie, City of	A+		
St. John's, City of	A+	Aa2	
Simcoe, County of	AA-		
Thunder Bay, City of	AA-		
Toronto, City of	AA	Aa1	AA
TransLink		Aa2	AA
Vancouver, City of	AA	Aaa	AA
Waterloo, Regional Municipality of		Aaa	
Wellington, County of	AA		
Windsor, City of	AA		
Winnipeg, City of	AA	Aa1	
Yellowknife		Aa2	
York, Regional Municipality of	AAA	Aaa	

\*Rating withdrawn 2013. **Municipal issuers upgraded at least once since 2008 (16 total):** Belleville, Brandon, Brantford, Chatham-Kent, Essex County, Guelph, Haldimand County, Halifax Regional Authority, Kingston, MFABC, Oxford County, Peterborough, Sault Ste. Marie, Thunder Bay, TransLink, Wellington County. **Municipal issuers downgraded at least once since 2008 (2 total):** North Bay, Vancouver.

What explains municipalities' stellar creditworthiness? Rating agencies highlight several factors, including conservative governance and management practices<sup>24</sup>; strong balance sheets; stable revenues and expenditures; and stable and predictable intergovernmental frameworks (see Appendix A). But two factors seem particularly important. The first is the provinces' implicit guarantee on municipal debt. Moody's, the only rating agency that explicitly quantifies bailout probabilities, believes there is a 71 percent to 90 percent chance of provincial bailouts for municipalities on the verge of default.<sup>25</sup> Moody's assigns the same range of probabilities to all Canadian municipalities.

The second factor is provincial oversight of municipal borrowing and finances. Provincial regulations include limits on borrowing decisions, levels, and practices, as well as trusteeship for fiscally mismanaged municipalities. Although these rules vary across and within provinces (Amborski and Nichols 2010), they all preclude reckless borrowing (Bird and Tassonyi 2003; Bird and Slack 1993).

The same cannot be said of American municipalities. Some are subject to strict regulation. Others are not. According to one study (Liu, Tian, and Wallis 2013: 578), only a third of states monitor local governments and less than 20 percent have "institutions and policies that enable or require state action in the face of a local government fiscal crisis."<sup>26</sup>

Variable regulation and weaker bailout guarantees may explain why municipal ratings are more volatile and dispersed in the United States than in Canada.<sup>27</sup> Moody's general obligation (GO) ratings for U.S. cities range from AAA to B3, though the vast majority are A3 or better and the modal (most frequently occurring) rating is Aa2 or two notches below AAA (Moody's 2014). Moody's GO ratings in Canada range from Aaa to Aa2 with a modal rating of Aaa (see Table 3).

## **4 Municipal, Provincial, and Federal Credit Compared**

### **4.1 Spread Developments**

The previous section assessed the overall state of municipal credit. This section compares the outcomes of federal, provincial, and municipal borrowers. The

24. A recent Moody's report highlights several attractive governance and management features. They include (1) long-term financial planning (in the form of strategic plans, long-term capital plans and multi-year operating budgets), (2) conservative management (no planned operating deficits, conservative investment policies, and the use of amortized debentures and sinking funds) and (3) good transparency and disclosure (regular audits, frequent reporting and detailed and accurate financial information) (Moody's 2012).

25. Moody's preferred term is "extraordinary support," not bailouts (Moody's 2013). Standard and Poor's acknowledges provinces' "established history" of "assisting their distressed municipalities through grants" (Standard and Poor's 2014).

26. It is the interaction of voters, capital markets, courts, and *ex ante* rules – not active state management – that plays "the key role in monitoring and limiting local government borrowing" in the United States (Liu, Tian, and Wallis 2013: 578).

27. See Lovely (2013) for a discussion and comparison of municipal creditworthiness in Canada and the United States.

dependent variable is the spread or interest rate premium municipalities pay over senior levels of government on 10-year Canadian-dollar denominated bonds. Spreads are measured in basis points, where one basis point refers to .01 percent annual interest. Figures 5 and 6 display municipal-federal and municipal-Ontario spreads, respectively.<sup>28</sup>

Municipal-federal differences were low and stable (50 basis points or less) before the crisis and began rising in mid-2007, reaching 100 basis points by mid-2008 and 200 basis points by December of that year. Toronto's spread peaked at 222 basis points in April 2009 and fell sharply thereafter, falling as low as 99 basis points in September 2009. Spreads fluctuated between roughly 80 and 150 basis points, depending on the period and issuer, from fall 2009 to spring 2014. The trend between May 2013 and April 2014 (or the end of the time series) was one of slow and steady decline. On April 21, 2014, spreads were 104.5 basis points for Toronto, 89.5 basis points for the Municipal Finance Authority of British Columbia, 103.5 basis points for York and Peel regions, and 104.5 basis points for Winnipeg.

Municipal-Ontario spreads displayed a similar, but less extreme and volatile pattern. The municipalities in the sample paid anywhere from 7 to 22 basis points more than Ontario on April 21, 2014. What accounts for these developments?

#### ***4.2 Standard Causes: Credit Risk, Liquidity, and Volatility and Uncertainty***

In the context of a currency union, three causes of spreads are commonly studied: credit risk, liquidity, and volatility and uncertainty in financial markets. This section assesses these factors in the Canadian municipal context. The analysis mimics pricing patterns in Canada's government bond market. Government of Canada yields are the benchmarks for pricing Ontario debt and Ontario yields are the benchmarks for pricing the debts of municipalities and the other provinces. Accordingly, I analyze Ontario-federal spreads first and municipal-Ontario spreads second.

The most commonly cited driver of intergovernmental spreads is credit risk.<sup>29</sup> Relative borrowing costs should rise as relative creditworthiness declines. It is tempting, given the sharp rise in Ontario's debts in recent years, to attribute increases in Ontario's borrowing costs to the province's declining fiscal performance. But provincial-federal spreads and debt levels do not correlate well over time, at least not since 2008.

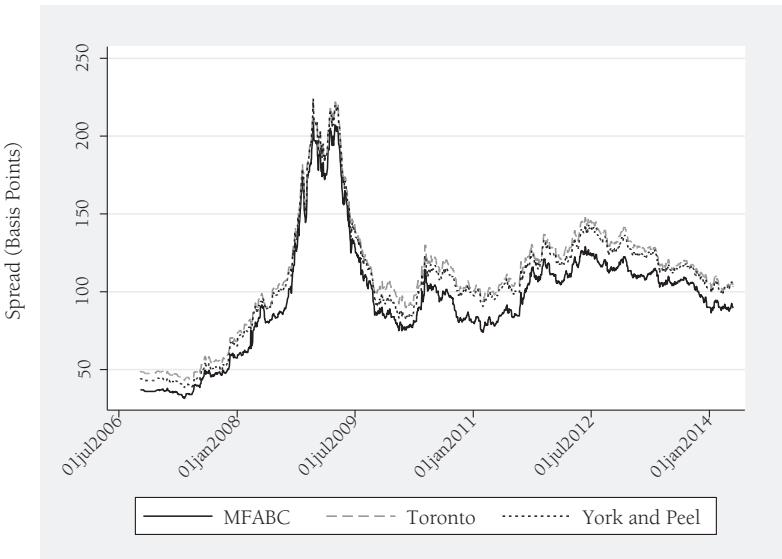
This is even truer of municipal-Ontario spreads. Municipal ratings have, generally speaking, held steady or improved since 2008, while Ontario's ratings

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28. Again, although data are limited to Ontario and five municipal borrowers, intermunicipal spreads in Canada are small. Thus, the figures broadly reflect sectoral developments at large.

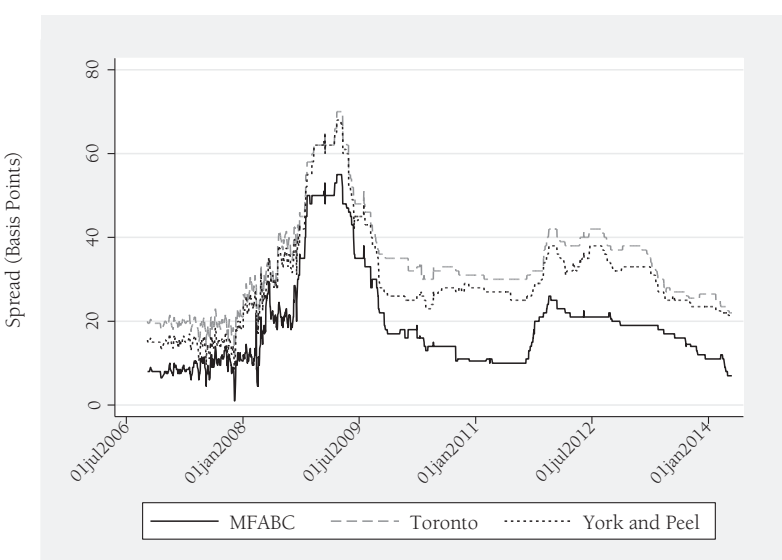
29. Credit risk consists of two components: (1) default risk, or the risk of a government failing to repay its debts in full and on time, and (2) spread risk, or "the risk that the bond's value will decline and/or the bond's price performance will be worse than that of other bonds against which the investor is compared because either (a) the market requires a higher spread due to a perceived increase in the risk that the issuer will default or (b) companies that assign ratings to bonds will lower a bond's rating" (Dattatreya and Fabozzi 2005).

Figure 5: Spreads over Government of Canada Bonds, 10-Year



Sources: BMO Capital Markets; Bloomberg; author's calculations.

Figure 6: Spreads over Government of Ontario Bonds, 10-Year



Sources: BMO Capital Markets; Bloomberg; author's calculations.

have fallen.<sup>30</sup> And yet municipal spreads are higher than they were before the crisis. Credit risk does not, therefore, appear to do a good job of explaining cross-sectoral differences.

Another possible explanation is volatility and uncertainty in financial markets. Investors have a well-known tendency to rebalance their portfolios towards less risky and more liquid assets during periods of fiscal distress (Beber, Brandt, and Kavajecz 2009). Subnational bonds are inherently riskier than sovereign debt. They are also less liquid. It follows that their spreads increase in times of crisis.<sup>31</sup> Developments in Ontario-federal spreads fit this pattern. Ontario's relative borrowing costs spiked roughly half a year after the Lehman Brothers bankruptcy and flared up again during the initial stages of the Greek debt crisis. They have fallen significantly in recent years, but still remain above their pre-crisis levels, perhaps because a degree of uncertainty and volatility in markets remains.

A flight to liquidity, but not a flight to quality<sup>32</sup> dynamic also plausibly accounts for municipal-Ontario developments. With roughly \$300 billion outstanding, Ontario's bonds are by far the most liquid in Canada's subnational market. Thus municipalities can expect, all else being equal, to pay more than Ontario, especially when market volatility rises. But this account is called into question when we compare municipal rates to the borrowing costs of smaller provinces. Prince Edward Island (P.E.I.) is a useful test case. Its bonds are less liquid than those of Toronto or the Municipal Finance Authority of British Columbia (MFABC).<sup>33</sup> They are also, according to the rating agencies, less creditworthy.<sup>34</sup> We would expect, therefore, P.E.I. to pay higher premiums, particularly during states of distress. But this does not occur. It is Canada's largest municipal borrowers – not P.E.I. – that pay the spread. In 2013, Toronto's spread over P.E.I. ranged from 15.5 to 27.5 basis points; MFABC's ranged from 1 to 8.5 basis points.

It is difficult to square these developments with standard theories of credit and liquidity risk. But a cursory look at the data suggests another explanation. Markets appear to price government debt in two steps: first, with reference to the liquidity and credit characteristics of government sectors, and second, with

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30. From 2008 to early 2015, Ontario had been downgraded once each by Moody's, Standard and Poor's, and the Dominion Bond Rating Service.

31. Lemmen (1999) observes a sharp increase in intergovernmental spreads in several federations (Australia, Canada, Germany, Switzerland, and the United States) after the Asian Financial Crisis and Russia's 1998 default. Schuhknecht, von Hagen, and Wolswijk (2009) find a positive relationship between intergovernmental spreads and a common measure of risk aversion (the spread between BBB-rated corporate bonds and U.S. treasuries) in four currency unions (Canada, Germany, Spain, and the Eurozone).

32. Each of the municipalities under study is, according to rating agencies, more creditworthy than Ontario. The flight to quality logic does not, therefore, apply.

33. The total direct debts of Toronto and MFABC in 2012 were US \$6.3-billion and US \$6.8-billion, respectively, according to Moody's. The equivalent figure for P.E.I. was US \$2.8-billion, slightly above York Region's US \$2.5-billion.

34. P.E.I.'s ratings with Standard and Poor's and Moody's are A and Aa2, respectively. Toronto's are AA and Aa1. MFABC's are AAA with both agencies.

reference to the characteristics of borrowers within sectors. In other words, equally rated provincial or municipal bonds are not substitutes. Credit rating agencies regard them as such,<sup>35</sup> but investors demand a premium to hold the debts of lower tiers of government. It is possible this cross-sectoral premium increases with uncertainty and volatility in financial markets, with investors seeking haven in the most creditworthy and liquid sectors first and in the most creditworthy and liquid issuers within sectors second. This may explain why P.E.I.'s spreads (the highest in the provincial sector) impose a lower bound on MFABC's spreads (the lowest in the municipal sector).

This approach is not entirely irrational. The relative risk of holding municipal and provincial bonds is difficult to assess, not least because they are issued by different levels of government with distinct responsibilities, revenue-raising capacities, and institutional environments. Thus, rather than meticulously comparing creditworthiness across sectors, investors take short cuts. They assume one sector is inherently riskier than the other and price debt accordingly (again, across sectors and then within them). Creditors appear to regard municipalities, which have revenue-raising powers that are inferior to and largely determined by provinces, as the riskier of the two groups, explaining the sector's persistently higher borrowing costs.

This theory is not entirely satisfying. It is not obvious why investors would consider municipalities – which have lower debts and strict borrowing limits – inherently riskier than provinces. But it does provide one account of empirical patterns. The next section provides another.

#### **4.3 Foreign Investment**

Canada's government bond market has experienced a sharp increase in foreign investment in recent years. This trend was triggered by the global financial and sovereign debt crises. Not only did these events deplete the world's supply of safe assets; they also made investors more risk averse. As I note above, the price of safe assets, including sovereign bonds, skyrocketed, resulting in significantly lower yields on government bonds in Canada and other safe-haven countries.

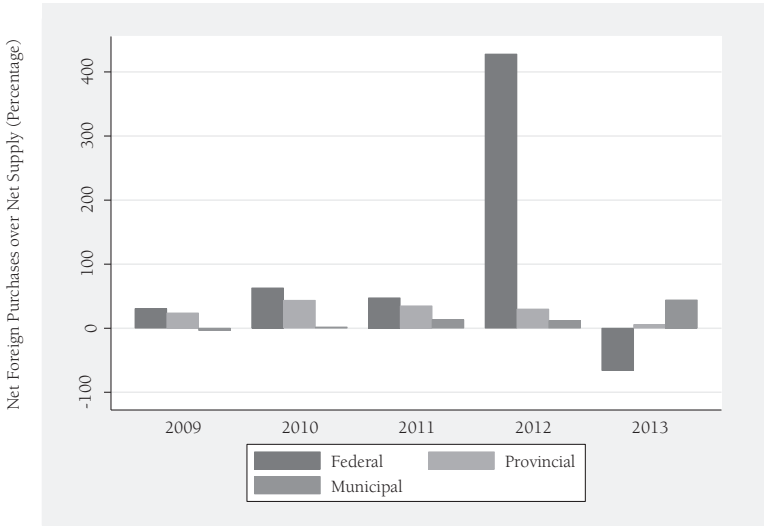
The attractions of federal bonds in this environment are clear. Investors consider them riskless. They are also highly liquid and denominated in an official reserve currency. Provincial and municipal bonds, by contrast, carry risk and are scarcer and harder to trade. But they are still solidly investment grade, pay a premium over federal bonds (a major attraction in a low-interest rate environment) and, depending on the issuer, are relatively liquid.

But foreign demand across government sectors has been uneven. Growth has, until very recently, been higher for senior levels of government. Figures 7 and 8 illustrate this asymmetry from two perspectives. Figure 7 divides, by year and government sector, the value of net foreign bond purchases by the value of net bond issues. Figure 8 displays the percentage of foreign over total holdings over time. The pattern is clear. Foreigners were, until 2013, buying larger shares of provincial and especially federal debt. Municipal bonds were a distant third.

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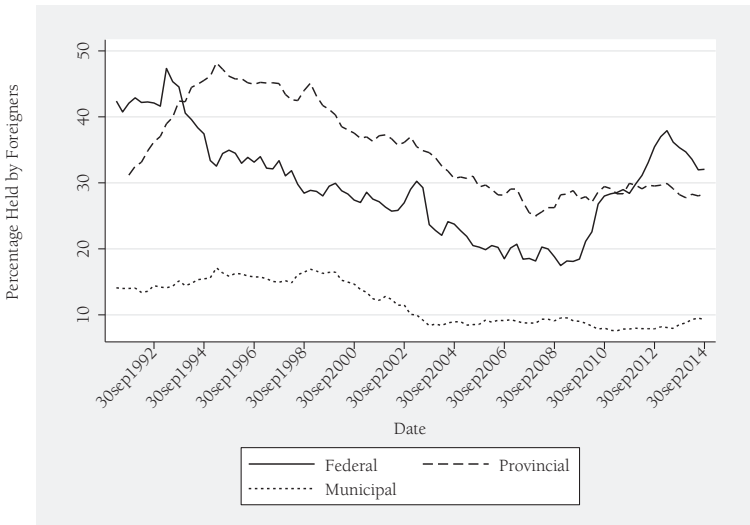
35. Rating agencies rate both sectors on the same global scale.

**Figure 7: Net Non-Resident Bond Purchases as a Percentage of Net Bond Supply by Government Sector**



Sources: Statistics Canada (Cansim tables 376-0146 and 378-0121); author's calculations. Book value. Years refer to calendar year, not government fiscal year.

**Figure 8: Percentage of Government Bonds Held by Non-Residents**



Sources: Statistics Canada (Cansim Tables 376-0146; 378-0121); author's calculations. Book value.

Have these developments affected cross-sectoral spreads? It is plausible. The provincial and federal sectors saw larger expansions of their investor bases, which should, in theory, have resulted in lower rates. A comparison of spread and investment patterns provides some evidence for this conclusion. The correlation is far from perfect, but provincial spreads widened considerably in 2012, a year in which foreign purchases exceeded 400 percent of the federal government's net bond supply.<sup>36</sup> Spreads narrowed in 2013, precisely as foreign appetites shifted: the municipal sector continued to receive net positive foreign investment; net provincial inflows were more or less flat; and foreign holdings of federal bonds declined.

Perhaps the more interesting question is why these investment patterns exist. Are foreign preferences over federal, provincial, and municipal bonds driven solely by volatility in financial markets, with investors chasing federal debt when volatility increases and provincial and municipal debt when volatility decreases?

Perhaps, but in a working paper (Hanniman 2015c), I argue that volatility is not the only cause of foreign demand. Investors' knowledge of subnational borrowers and their institutional environments also plays a role. Subnational governments do not borrow in isolation. They belong to complex webs of intergovernmental fiscal relations that affect everything from their ability to raise taxes, to national control over subnational borrowing, to the probability of bailouts in the event of imminent default. These outcomes are some of the most important determinants of subnational creditworthiness, but their fiscal federal foundations are difficult to decode, particularly for geographically distant investors. Foreigners can gather this information, but at a cost. For some investors, the costs outweigh the benefits and they do not invest. For others, the costs are worth the effort, but they will invest only after carrying out considerable research. The upshot is higher relative borrowing costs for subnational borrowers.

Interviews with underwriters support this theory (Hanniman 2015c). Portfolio managers generally require approvals from risk committees to buy foreign securities. These approvals are relatively easy to obtain for federal debt, but provincial and municipal bonds require additional research. Borrowers do their best to facilitate this process. Several have launched or improved their investor relations programs. Roadshows to New York and other financial centres are a major part of these efforts.

But provinces and municipalities have to be patient. Investors enter the Canadian bond market in a distinct order, investing in federal bonds first; the bonds of explicitly guaranteed federal agencies such as the Canada Mortgage and Housing Corporation second; provincial bonds third; and municipal bonds fourth. The order reflects the informational logic sketched above. Sovereign borrowers are well-known. Federal agencies are less known, but their creditworthiness is relatively costless, on account of Ottawa's explicit bailout guarantee, to evaluate.

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36. It is possible for net foreign bond purchases to exceed net supply in a given year, because foreign investors buy bonds on primary *and* secondary markets.

Provinces and municipalities are less well known and their debts are not explicitly guaranteed. Accordingly, lenders have to determine the likelihood of bailouts and, because this likelihood is never certain, borrowers' capacity to service their debts independently of federal support. Naturally, the municipal sector is the last to be evaluated. Investors cannot assess municipalities until they have assessed the creditworthiness of their implicit guarantors – the Canadian provinces – first.

Information is not, incidentally, the only determinant of foreign demand. Some investors, particularly ones with significant liquidity needs, will never hold large shares of municipal debt. Central banks and sovereign wealth funds, which have been active in the federal and provincial bond markets, fall into this category.

## 5 Conclusion

Canadian municipalities have had little difficulty borrowing in recent years, even while subnational governments in other countries have (Vammalle and Hulbert 2012). Interest rates are low, demand for long-term bonds is strong, and the investor base is expanding. The only negative development is that municipalities are paying more to borrow relative to provinces and the federal government than they did before the crisis. But there were signs, in spring 2014, of this situation changing.

This paper has sought to explain these developments. It attributes municipal success to factors underpinning low interest rates and strong municipal creditworthiness. It attributes the superior conditions of federal and provincial borrowers to increased volatility and uncertainty in financial markets and patterns of foreign investment in Canada's government bond markets.

The analysis informs debates about how to address Canada's municipal infrastructure deficit. This deficit is considerable. How will municipalities fund it? Higher property taxes and user fees are one possibility, but political resistance to these increases is considerable. Transfers from federal and provincial governments are another option, but senior levels of government face their own fiscal challenges. More borrowing should, for practical reasons, be part of the solution. Fortunately, it also makes good economic sense. Borrowing is an equitable and efficient means of financing lumpy capital investments.

Granted, borrowing carries risks. Debt charges divert revenues from other uses. They also increase borrowers' exposure to interest-rate shocks. But Canadian municipalities are well positioned to manage these challenges. Their debts are a fraction of provincial liabilities and provincial rules prohibit municipalities from borrowing to excess. Municipalities also issue fixed-interest rate debt and assume virtually zero re-financing risk.<sup>37</sup> Finally, municipalities have the capacity to reduce borrowing in a way that provinces, which borrow to finance capital and operating deficits, do not. Thus, many municipalities would be wise to take

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37. Provinces regularly roll over bullet bond maturities, an action that exposes them to refinancing risk. Municipal refinancing is, by contrast, low. Small municipalities issue almost exclusively in serial bonds, while large municipalities match bullet bond maturities with sinking fund revenues.

advantage of prevailing interest rates and increase their borrowing (provided, of course, they have adequate and reliable revenues to make debt payments).

This paper also contributes to research on subnational borrowing and hard budget constraints (Rodden, Eskeland, and Litvack 2003; Bird and Tassonyi 2003). This literature asks whether local fiscal discipline ought to be enforced by credit markets or hierarchical rules from higher levels of government. Canada's system of municipal borrowing is hierarchical: municipal borrowing is subject to provincial limits and market discipline is undermined by the provinces' implicit bailout guarantees. The Canadian provinces also benefit from an implicit bailout guarantee, but borrow free of federal limits (Hanniman 2013b), which explains, in part, why provinces are more indebted.<sup>38</sup>

Some argue that provincial rules work *too* well; that they prevent municipalities from making adequate infrastructure investments. This criticism is not entirely fair. Many municipalities borrow within their provincial limits and provinces have, in some cases, relaxed these constraints.<sup>39</sup>

Perhaps the system's greatest quality is the confidence it instills in lenders. Students of fiscal federalism are critical of implicit bailout guarantees and the excessive borrowing they encourage. But the absence of these guarantees can be equally problematic. Lenders do not merely underprice credit; they often overprice it. Nowhere was this problem more evident than in the Eurozone in 2012, when the biggest threats to Italian and Spanish solvency were not excessive borrowing, but exorbitant risk premiums or fear of insolvency itself (De Grauwe 2012).<sup>40</sup> American municipalities faced a similar plight in 2010 and 2011, when a single analyst's false prediction of 50 to 100 significant municipal defaults triggered mass selloffs of municipal debt.

Canadian municipalities are unlikely to suffer this fate. Provincial regulation keeps debt within reasonable limits and implicit bailout guarantees keep market panic at bay. These virtues should not be taken for granted, not in light of municipalities' infrastructure needs and not in light of the recent failings of market-based systems.

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38. Indeed, gross provincial debts now account for 50 percent of national GDP, making the provinces the most indebted group of subnational governments in the Organisation for Economic Co-operation and Development.

39. Ontario typically limits municipal debt servicing costs to 25 percent of own-source revenues minus development charges. In 2011, however, the Region of York, a municipality experiencing significant population growth, was permitted to add 80 percent of its revenues from development charges over the last three years to its debt servicing limit. The agreement expires in 2021. The region's growing tax base should, in theory, allow it sustain the additional debt burden.

40. Stand-alone governments (or governments with access to a printing press) can ease investor panic by guaranteeing their bondholders liquidity. However, the constituent members of currency unions (e.g., subnationals and Eurozone member states) have no such capacity. This makes them susceptible to "bad equilibria" or scenarios in which rising interest rates and deteriorating fiscal health become mutually reinforcing (De Grauwe 2012).

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## **Appendix A: Rating Agencies' Assessments of Institutional Frameworks Governing Canadian Municipalities**

### *Standard and Poor's*

Standard and Poor's methodology for rating local and regional governments outside the United States incorporates assessments of the institutional frameworks governing these entities. Frameworks are assessed on a 6-point scale according to their (1) predictability; (2) transparency and accountability; and (3) revenue and expenditure balance (which depends, in turn, on the adequacy of revenues, extraordinary support mechanisms, and hierarchical oversight and control) (Standard and Poor's 2014). All municipal frameworks in Canada receive a score of 2 (the second highest possible score), signifying a "very predictable and well-balanced system." The following comments are regularly found in Canada's municipal rating reports:<sup>41</sup>

*Provincial-municipal relationships have proven to be more dynamic than the federal-provincial one, largely because the municipal governments are established through provincial statute and not the constitution. Historically, the provinces have taken a more active role in municipal affairs than the federal government in provincial matters. Although there have been long periods of relative stability, provincially imposed large-scale changes to municipal revenue powers and expenditure responsibilities have occurred.*

*Provinces mandate a significant proportion of municipal spending and, through legislation, require municipalities to pass balanced operating budgets (although they also provide operating fund transfers). Nevertheless, municipalities generally have the ability to match expenditures well with revenues, except for capital spending, which can be intensive for some. Many have been limited in their ability to renew their infrastructure, roads, water, and wastewater, due to constraints on fee and property tax increases. Property taxes are the primary source of own-source revenues for Canadian municipalities, followed by fees and transfers from both the provincial and federal governments. Chief expenditure categories of Canadian municipalities are transportation services, which include roads and transit; environmental services, which include water distribution and treatment and wastewater collection; protection services such as fire and police; and recreation and cultural services. Small and rural municipalities generally receive higher provincial transfers, for both operating and capital programs, compared with those of their more urban counterparts, but there are no formal equalization schemes.*

*We believe financial information is quite timely. National accounting standards are strong and improving, in our view, although adoption can vary somewhat. Statutes require audited statements. While there are no national*

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41. See, for example, Standard and Poor's (2014) *Supplementary Analysis: Regional Municipality of Peel*.

*standards that apply to budgeting practices, a five-year capital budgeting process is usually the minimum. In addition, only current-year budgeting is required generally for operations.*

*The provinces have an established history assisting their distressed municipalities through grants.*

Moody's uses two criteria to assess the frameworks governing subnational governments: (1) the predictability, stability, and responsiveness of the legislative background governing the framework and (2) the flexibility of revenues and expenditures (Moody's 2013). Both categories are equally weighted. Canadian municipalities receive the highest possible score for both. The following comments are regularly found in Moody's rating reports for Canadian municipalities:<sup>42</sup>

*The institutional framework governing municipalities in Ontario is mature and highly developed. Historically, changes to the institutional framework have occurred at a measured, evolutionary pace, following discussion between both parties. Nevertheless, in certain cases, changes have occurred more rapidly.*

*[The creditworthiness of Ontario municipalities] benefits from the stability inherent in the provincial institutional framework. Provincial legislation dictates a high degree of oversight, including limits on debt servicing costs, while policy flexibility, on both the revenue and expenditure sides of the ledger, helps [municipalities] manage pressures as they arise.*

Moody's also assigns a "high likelihood" (71 percent to 90 percent) of provincial support for a municipality facing an "acute liquidity stress." The assessment reflects "the incentive provided to [provincial governments] of minimizing the risk of potential disruptions to the capital markets if...any...municipality were to default."

## **Appendix B: The Municipal Investor Base**

A key distinction between the Canadian and American municipal bond markets is the nature of the investor base. The American market is dominated by retail investors; the Canadian market by pension funds, asset managers, and other institutional lenders. The difference is driven by the tax treatment of municipal bonds. Retail lenders in the United States are exempt from paying federal and, in most cases, state and local taxes on interest earned. This exemption lowers yields on municipal bonds and discourages institutional lenders, who do not enjoy tax-exempt status, from investing.<sup>43</sup>

42. See, for example: Moody's Investors Service (2014) *Credit Opinion: Peel, Regional Municipality of*.

43. Ontario is the only Canadian government to issue tax-exempt bonds. It issued \$400 million of Ontario Opportunity Bonds in May 2003. Interest on the bonds was taxable, but Ontario individuals, trusts, and partnerships were eligible for a refund on provincial tax paid. The bonds did not lower borrowing costs, perhaps because interest was still subject to federal tax (City of Toronto Staff Report 2013).

The pros and cons of tax-exempt bonds are hotly contested. Some see them as a source of cheap infrastructure finance, while others argue that they distort capital markets and redistribute forgone tax revenues to households wealthy enough to hold them. Their adoption in Canada would also be politically fraught and would require amendments to the federal *Income Tax Act* and federal-provincial tax collection agreements. A recent staff report by the City of Toronto opposed the use of tax-exempt bonds for these and other reasons and recommended direct federal subsidies to offset municipal interest payments as alternatives.<sup>44</sup>

The recent struggles of municipal borrowers in the United States suggest another problem with tax-exempt bonds. By attracting retail lenders, they may increase volatility in municipal borrowing costs. Retail lenders are less knowledgeable of municipal securities than institutional investors and tend to be more susceptible to headline risk as a result. This lack of knowledge may explain why U.S. investors sold tens of billions of dollars of municipal bonds in 2010 and 2011 after Meredith Whitney, a single analyst with little knowledge of the sector, falsely predicted 50 to 100 sizeable local defaults.<sup>45</sup>

### **Appendix C: Inter-Municipal Spreads**

The goal of this paper is to account for broad trends in municipal borrowing costs. Differences in municipal borrowing costs (or inter-municipal spreads) account for a small share of these trends and are not, therefore, discussed in the body of the text. But this appendix provides a brief overview of these differences. Underwriters interviewed for this research identify three major causes of inter-municipal spreads: credit risk, liquidity, and the creditworthiness of the municipality's home province. Consider an intra-provincial comparison. Toronto pays a small spread over York and Peel. This is to be expected. Toronto is rated AA and Aa1 by Standard and Poor's and Moody's, respectively. York and Peel regions are both rated AAA.<sup>46</sup> Toronto's bonds are, however, more liquid, which may explain why the spread is not wider.

For an interprovincial comparison, consider the Municipal Finance Authority of British Columbia (MFABC). MFABC is also an AAA-rated issuer, but its bonds are more liquid than those of York or Peel Regions. They are also guaranteed by a AAA-rated province. Yields on MFABC's 10-year bonds were, on average, 12 basis points less than York's and Peel's from late 2008 to early 2014 as a result.

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44. See City of Toronto (2013) *Tax-Exempt and Build America Bonds* (Staff Report, September 4), Deputy City Manager and Chief Financial Officer. The report proposes the "Build America Bonds" program as a template.

45. See Lewis (2011) for an insightful take on these events.

46. These ratings are current as of August 2014.

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